

WHAT IS CLAIMED IS:

1. A system, comprising:

a control card, comprising:

a control processor to execute a control portion of an exterior gateway protocol;

and

a routing table of exterior gateway routes and devices;

a line card, comprising:

a line processor to execute an offload portion of an exterior gateway protocol; and

a communications port to allow termination of at least one communication link;

and

a backplane to allow the control card and the line card to communicate.

2. The network device of claim 1, the control processor further comprising a general-purpose processor.

3. The network device of claim 1, the control processor further comprising an Intel Architecture processor.

4. The network device of claim 1, the line processor further comprising a network-enabled processor.

5. The network device of claim 1, the line processor further comprising an Intel IXP processor.

6. The network device of claim 1, the backplane further comprising a physical backplane connection.

7. The network device of claim 1, the backplane further comprising a network.

8. A method of processing an exterior gateway protocol packet, comprising:

receiving an incoming packet at a line-card;

determining if the packet is valid;

parsing the packet to extract protocol data;

transmitting any control-relevant data to a control card; and
generating message traffic for peer gateways.

9. The method of claim 8, receiving an incoming packet at a line-card further comprising receiving a packet through the Transmission Control Protocol.

5 10. The method of claim 8, determining if the packet is valid further comprising determining if the packet is a mal-formed packet.

11. The method of claim 8, determining if the packet is valid further comprising applying a packet filter to the packets.

10 12. The method of claim 8, determining if the packet is valid further comprising applying an address filter to the packets.

13. The method of claim 8, transmitting any control-relevant data to a control card further comprising transmitting data related to valid updates from gateway peers.

14. The method of claim 8, parsing the packet to extract protocol data further comprising decrypting encrypted packets.

15 15. The method of claim 8, generating message traffic for peer gateways further comprising generating responses required by the incoming packets.

16. The method of claim 8, generating message traffic for peer gateways further comprising announcing routes to peer gateways.

20 17. The method of claim 8, generating message traffic for peer gateways further comprising encrypting messages for peer gateways that require encryption.

18. A method of establishing an offload portion of a distributed exterior gateway protocol, comprising:

initializing a line card;

25 registering an offload portion of a protocol to be executed by the line-card with a central registration point;

setup a control connection with a control card;

transmit data resource data to the control card;
receiving configuration information from the control card;
establishing connections with exterior gateway peers;
performing Border Gateway Protocol functions at the line-card; and

5 transmitting only valid Border Gateway Protocol data to the control card.

19. The method of claim 18, registering an offload portion further comprising registering with
a distributed control plane architecture infrastructure module.

20. The method of claim 18, performing Border Gateway Protocol functions further
comprising parsing and validating incoming packets.

10 21. The method of claim 18, performing Border Gateway Protocol functions further
comprising filtering all mal-formed, illegal and duplicate update messages from peer
gateways.

22. The method of claim 18, performing Border Gateway Protocol functions further
comprising caching a routing table received from the control card.

15 23. The method of claim 18, performing Border Gateway Protocol functions further
comprising running output policies for each peer gateways.

24. The method of claim 18, performing Border Gateway Protocol functions further
comprising encrypting and decrypting packets as necessary.

20 25. A method of establishing a control portion of a distributed exterior gateway protocol,
comprising:

initializing a control card;
registering a control portion of a protocol to be executed by the control card with a
central registration point;
setting up control connections with line-cards executing offload portions of the
25 protocol;
configuring the line cards; and

performing central Border Gateway Protocol functions.

26. The method of claim 25, configuring the line-cards further comprising providing a routing table and policy data to each line card.

27. The method of claim 25, registering a control portion of a protocol to be executed further comprising registering the control portion with a distributed control plane architecture infrastructure module.

28. The method of claim 25, performing central Border Gateway Protocol functions further comprising processing valid updates from the line cards and adjusting the routing table as needed.

29. The method of claim 25, performing central Border Gateway Protocol functions further comprising providing an updated routing table to each line card as necessary.

30. An article of machine-readable code containing instructions that, when executed, cause the machine to:

receive an incoming packet at a line-card;

determine if the packet is valid;

parse the packet to extract protocol data;

transmit any control-relevant data to a control card; and

generate message traffic for peer gateways.

31. The article of claim 30, the instructions causing the machine to receive an incoming packet at a line-card further cause the machine to receive a packet through the Transmission Control Protocol.

32. The article of claim 30, the instructions causing the machine to determine if the packet is valid further causes the machine to determine if the packet is a mal-formed packet.

33. The article of claim 30, the instructions causing the machine to determine if the packet is valid further causes the machine to apply a packet filter to the packet.

34. The article of claim 30, the instructions causing the machine to determine if the packet is valid further causes the machine to apply an address filter to the packet.